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means for actuating the lock in order to prevent movement of the saw blade in a plane parallel to the table surface.

#### REMARKS

The Office Action dated May 22, 2001, has been received and carefully reviewed. The issues raised in that Office Action were discussed with the examiner during an interview on October 15, 2001, and, as an initial matter, Applicant's representative would like to thank the examiner for his helpful suggestions and for the courtesies extended during the interview.

One paragraph of the specification and several of the claims have been amended in order to correct grammatical and typographical errors. No new matter has been amended. Claims 30-32 have been canceled without prejudice and new claims 35-54 have been added. Therefore, reexamination and reconsideration of claims 1-19, 21-29 and 33-54 is hereby solicited.

In the Office Action mailed May 22, 2001, several claims were rejected under Section 112, second paragraph as being indefinite. The clarifying amendments to claim 1 are believed to overcome the indefiniteness rejection of claim 1. Further, claim 31 has been cancelled, thereby mooting the

indefiniteness rejection of claim 31.

In addition, claims 18, 26, 33 and 34 were rejected as indefinite, because these claims allegedly fail to recite sufficient structure to perform the recited function. Because these rejections are all essentially the same, these rejections will be concurrently traversed.

Applicant respectfully contends that all claims fully comply with the requirements of Section 112, second paragraph and MPEP 2173. Applicant has thoroughly studied the requirements of Section 112, second paragraph and can find no legal support for the Examiner's legal position. Quite to the contrary, MPEP 2173 clearly indicates that the present claims are not indefinite.

It is axiomatic that the applicant may use functional language or any style of expression that makes clear the boundaries of the subject matter for which protection is sought. MPEP 2173.01. Moreover, MPEP 2173.05(g) expressly states:

There is nothing inherently wrong with defining some part of an invention in functional terms. Functional language does not, in and of itself, render a claim improper.

The claims rejected by the Examiner utilize functional language in order to define the cooperation between the various recited limitations of the claims and, unquestionably, a person of skill in the art can easily determine the metes

and bounds of each of the present claims. In particular, the legal threshold for indefiniteness under Section 112, second paragraph, is whether "the patentable subject matter [is defined] with a reasonable degree of particularity and distinctiveness." MPEP 2173.02 (Emphasis in original). This MPEP section further states:

Some latitude in the manner of expression and aptness of terms should be permitted even though the claim language is not as precise as the examiner might desire. Examiners are encouraged to suggest claim language to applicants to improve the clarity of precision of the language used, but should not reject claims or insist on their own preferences if other modes of expression selected by the applicants satisfy the statutory requirement. Id. (Emphasis added)

Applicant has defined the claims in a manner in which the Applicant regards his invention. In view of the remote nature of the closest art cited by the Examiner during the prosecution of this application, clearly the present invention is pioneering. Thus, Applicant is entitled to broadly claim his invention and most importantly, "breadth is not indefiniteness." MPEP 2173.04. This MPEP section continues:

If the scope of the claim embraced by the claims is clear, and if applicants have not otherwise indicated that they intend the invention to be of a scope different from that defined in the claims, then the claims comply with 35 U.S.C. 112, second paragraph. Id. (Emphasis added)

According to MPEP 2172.01, the applicant may be required to recite a necessary structural cooperative relationship of

the recited elements, if the applicant has described such structural cooperation as being necessary to practice the invention. However, Applicant has in no way indicated in the present specification or otherwise that any specific structural cooperation is necessary or essential to the claimed inventions. To the contrary, Applicant has indicated that a variety of sensors may be utilized with the claimed inventions. (See e.g., page 12, line 23 to page 13, line 4 and page 20, lines 3-5 of the present specification). Further, a person of skill in the art will readily recognize that a wide variety of lock structures, or means for preventing movement, may be utilized in conjunction with the present teachings. Naturally, the choice of a particular sensor and lock will require a certain structural cooperation. However, in view of the wide variety of options taught to the person of skill by the present teachings, a person of skill in the art will readily recognize that a wide variety of options may be utilized to provide structural cooperation between the recited elements. Because Applicant has in no way indicated that any particular structural cooperation is essential to the claimed inventions, MPEP 2172.01 is not implicated in this application.

Method claims 51 and 52 are added by the above amendment. During the interview, the examiner indicated that such method claims might be subject to a restriction

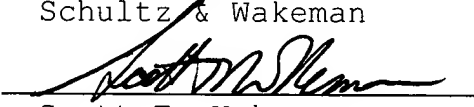
requirement. It is respectfully submitted that these method claims are directed to a method of using the apparatus defined by earlier claims and recite much of the same structure required by the apparatus claims. Moreover, new claims 53 and 54 are linking claims as discussed in MPEP 809.03(C), and the presence of such claims should prevent a restriction requirement from being made. For these reasons, it is respectfully submitted that the method claims can properly be maintained in the present application.

In conclusion, Applicant respectfully submits that the present claims are patentable in all respects and an early Notice of Allowance is solicited. However, in the event that the Examiner elects to reiterate this indefiniteness rejection, Applicant hereby earnestly requests the Examiner to specifically identify his legal support for this rejection, so that Applicant will be properly notified of the Examiner's grounds for making such a rejection before Applicant is required to submit an Appeal Brief. As noted above, not only can Applicant not locate any legal support for the Examiner's position, but Applicant respectfully submits that MPEP 2173 completely contradicts the Examiner's position. Therefore, Applicant is at a complete loss as to the Examiner's alleged legal support for this rejection and requests further elucidation of this indefiniteness rejection in order to further respond (if necessary) to the Examiner's position.

Finally, in the Amendment filed November 20, 2000, Applicant requested withdrawal of the species election requirement and rejoinder of claims 2-11, which continue to stand withdrawn from consideration in the Office Action mailed May 22, 2001. Because paragraph 3 of the Office Action mailed May 22, 2001 indicates that generic claim 1, from which claims 2-11 depend, has been found to be allowable in substance, Applicant hereby reiterates his request to rejoin claims 2-11 for substantive examination in accordance with MPEP 809.02(e).

Respectfully submitted,  
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**IN THE SPECIFICATION:**

Please replace the paragraph beginning at page 17, line 23 with:

A flange 112 is formed integrally with the pivotal support bracket 41 and extends into a gap formed between the folded end of the protrusion 111 and the support portion 51, so that one end of the fixing screw 61 opposes the flange 112 as shown in FIG. 10. The flange 112 has a width in a radial direction about the pivotal axis (the pin 42) such that the fixing screw 61 opposes the flange 112 when the saw unit 50 is in any [of the] pivotal position. In the same manner as the slide lock mechanism 60 of the first embodiment, the pivot lock mechanism 110 may optionally be protected by a dust cover 113 from the outside environment.

**IN THE CLAIMS:**

1. (Twice Amended) A circular saw comprising:  
a table having an upper surface for placing a workpiece thereon;

a saw unit having a saw blade mounted thereon;  
means for supporting said saw unit on said table, said supporting means enabling [such that] said saw unit [is adapted] to move in a horizontal direction parallel to said upper surface of said table and [is adapted] to move in a

vertical direction relative to said upper surface of said table; and

at least one of first lock means and second lock means, wherein said first lock means [is adapted to] automatically [prevent] prevents said saw unit from moving in the horizontal direction upon detection by a first sensor means of movement of said saw unit in the vertical direction [by a first sensor means], and the second lock means [is adapted to] automatically [prevent the] prevents said saw unit from moving in the vertical direction upon detection by a second sensor means of movement of said saw unit in the horizontal direction [by a second sensor means].

2. (Thrice Amended) The circular saw as defined in claim 1 wherein the circular saw includes the first lock means and said first lock means comprises a fixing member for fixing said saw unit in position relative to said table in the horizontal direction and an actuator for selectively operating said fixing member.

3. (Thrice Amended) The circular saw as defined in claim 2 wherein:

said support means includes a support arm mounted on said table, a slide member horizontally slidable relative to said support arm, and hinge means for vertically pivotally



connecting said saw unit to said slide member; and

wherein said fixing member [selectably] fixes said slide member in position relative to said support arm[, and] when said first sensor means detects [the] vertical pivotal movement of said saw unit relative to said slide member.

4. (Twice Amended) The circular saw as defined in claim 3 wherein:

said slide member comprises a slide shaft slidably inserted into a holder provided on said support arm;

said fixing member comprises a screw inserted into a threaded hole formed in said holder in a direction perpendicular to [an axial direction] a longitudinal axis of said slide shaft, said screw having one end arranged and constructed to abut [abutting] said slide shaft; and

wherein said actuator [rotating] rotates said screw in both clockwise and counterclockwise directions so as to move said screw toward and away from said slide shaft.

5. (Amended) The circular saw as defined in claim 4 further including a dust cover mounted on said holder, said dust cover [for] protecting said actuator and said screw from the outside environment.

6. (Thrice Amended) The circular saw as defined in claim

4 wherein:

said first sensor means comprises a detector plate mounted on one of said slide shaft or said saw unit, and an optical sensor mounted on the other of said slide shaft and said saw unit;

said detector plate having a plurality of parallel identification bars marked thereon, and said parallel bars being spaced from each other by a predetermined distance; and wherein said optical sensor [detecting] detects movement of said parallel identification bars as a change in a reflected light pattern.

7. (Thrice Amended) The circular saw as defined in claim 1 wherein the circular saw includes the second lock means and said second lock means comprises a fixing member for fixing said saw unit in position relative to said table in the vertical direction[, ] and an actuator for selectively operating said fixing member[, and second sensor means for detecting the horizontal movement of said saw unit].

8. (Thrice Amended) The circular saw as defined in claim 7 wherein:

said support means includes a support arm mounted on said table, a slide member horizontally slidable relative to said support arm, and hinge means for vertically pivotally

connecting said saw unit to said slide member; and

wherein said fixing member [of said second lock means selectively] fixes the pivotal position of said saw unit relative to said slide member[, and] when said second sensor means detects [the] horizontal [slide] sliding movement of said slide member relative to said support arm.

9. (Twice Amended) The circular saw as defined in claim 8 wherein:

said slide member comprises a slide shaft slidably inserted into a holder provided on said support arm; said fixing member comprises a screw engaged with a threaded hole formed in said saw unit in a direction parallel to the pivotal axis of said saw unit;

said slide shaft having a flange portion that includes an abutting surface extending within a plane perpendicular to the pivotal axis of said saw unit[, so that] and one end of said screw [abuts] is arranged and constructed to abut said abutting surface of said flange portion; and

wherein said actuator [rotating] rotates said screw in both clockwise and counterclockwise directions so as to move said screw toward and away from said abutting surface.

10. (Amended) The circular saw as defined in claim 9 further including a dust cover mounted on said saw unit, said

dust cover [for] protecting said actuator and said screw from the outside environment.

11. (Thrice Amended) The circular saw as defined in claim 9 wherein:

said sensor means includes a plurality of parallel identification bars marked on said slide shaft and [includes] an optical sensor provided on said holder;

said parallel bars being spaced from each other by a predetermined distance [in] along a longitudinal [direction] axis of said slide shaft; and

wherein said optical sensor detects movement of said parallel identification bars as a change in a reflected light pattern.

12. (Reiterated) The circular saw as defined in claim 1 wherein the circular saw includes both said first lock means and second lock means.

13. (Thrice Amended) The circular saw as defined in claim 12 wherein:

said first lock means includes a first fixing member for fixing said saw unit in position relative to said table in the horizontal direction and a first actuator coupled to the first fixing member, said first actuator selectively moving said

first fixing member between a locked position and an unlocked position; and

said second lock means includes a second fixing member for fixing said saw unit in position relative to said table in the vertical direction and a second actuator coupled to the second fixing member, said second actuator selectively moving said second fixing member between a locked position and an unlocked position.

14. (Thrice Amended) The circular saw as defined in claim 13 wherein:

said support means includes a support arm mounted on said table and a slide shaft coupled to the support arm, wherein the slide shaft [slides] is arranged and constructed to slide horizontally relative to said support arm, and a hinge means coupling the slide shaft to the saw unit, wherein said saw unit can pivot [the slide shaft pivots] vertically relative to said [saw unit] slide shaft;

wherein said first fixing member [of said first lock means selectably] fixing said slide shaft in position relative to said support arm[, and] when said first sensor means [detecting] detects vertical pivotal movement of said saw unit relative to said slide shaft; and

wherein said second fixing member [of said second lock means selectably fixing] fixes the pivotal position of said

saw unit relative to said slide shaft[, and] when said second sensor means [detecting] detects horizontal movement of said saw unit relative to said support arm.

15. (Four Times Amended) The circular saw as defined in claim 14 wherein:

said slide shaft is slidably received in a holder provided on said support arm;

said first fixing member comprises a first screw inserted into a first threaded hole formed in said holder in a direction perpendicular to [an axial direction] a longitudinal axis of said slide shaft, [said first screw having one end for abutting] one end of said first screw being arranged and constructed to abut said slide shaft;

wherein said first actuator [rotating] rotates said first screw in both clockwise and counterclockwise directions so as to move said first screw toward and away from said slide shaft;

said second fixing member comprises a second screw inserted into a second threaded hole formed in said saw unit in a direction parallel to the pivotal axis of said saw unit; and wherein the circular saw further comprises a flange portion having an abutting surface extending within a plane perpendicular to the pivotal axis of said saw unit, [and is disposed such that] one end of said second screw being

arranged and constructed to abut [selectively abuts] said abutting surface of said flange portion; and

wherein said second actuator [rotating] rotates said second screw in both clockwise and counterclockwise directions so as to move said second screw toward and away from said abutting surface.

16. (Amended) The circular saw as defined in claim 15 further including a first dust cover and a second dust cover, said first dust cover being mounted on said holder, said first dust cover [for] protecting said first actuator and said first screw from the outside environment, and said second dust cover being mounted on said saw unit, said second dust cover [for] protecting said second actuator and said second screw from the outside environment.

17. (Thrice Amended) The circular saw as defined in claim 15 wherein:

said first sensor means comprises a detector plate mounted on one of said slide shaft or said saw unit, and a first optical sensor mounted on the other of said slide shaft and said saw unit;

said detector plate having a plurality of first parallel identification bars marked thereon, [and] said first parallel identification bars being spaced from each other by a

predetermined distance;

wherein said first optical sensor [detecting] detects movement of said first parallel identification bars as a change in a reflected light pattern;

said second sensor means comprises a plurality of second parallel identification bars marked on said slide shaft and [includes] a second optical sensor provided on said holder;

said second parallel identification bars being spaced from each other by a predetermined distance [in a] along the longitudinal [direction] axis of said slide shaft; and

wherein said second optical sensor [detecting] detects movement of said second parallel identification bars as a change in a reflected light pattern.

18. (Thrice Amended) An apparatus comprising:

a table,

a saw [blade] unit coupled to the table[, the] and comprising a saw blade [being] that is movable at least in a horizontal direction relative to the table and a vertical direction relative to the table and

at least one lock coupled to and disposed between the saw unit and the table, the at least one lock selected from the group consisting of a first lock and a second lock, wherein:



the first lock is operationally coupled to [the table and the saw blade] a first sensor, wherein the first lock automatically prevents the saw blade from moving in the horizontal direction relative to the table when [a] the first sensor detects the saw blade moving in the vertical direction and automatically permits the saw blade to move in the horizontal direction after the first sensor detects the saw blade has stopped moving in the vertical direction and

the second lock is operationally coupled to [the table and the saw blade] a second sensor, wherein the second lock automatically prevents the saw blade from moving in the vertical direction relative to the table when [a] the second sensor detects the saw blade moving in the horizontal direction and automatically permits the saw blade to move in the vertical direction after the second sensor detects the saw blade has stopped moving in the horizontal direction.

19. (Reiterated) An apparatus as in claim 18 wherein the apparatus comprises both said first lock and said second lock.

20. (Canceled by previous amendment)

21. (Twice Amended) An apparatus as in claim 19, further comprising:

a first actuator coupled to the first lock and first sensor and

a second actuator coupled to the second lock and the second sensor, wherein the first and second actuators convert electric signals generated by the sensors into mechanical energy to [engage] actuate the first and second locks, respectively.

22. (Thrice Amended) An apparatus as in claim 21, further comprising:

a support arm mounted on the table [and coupled to the saw blade],

a slide shaft coupled to the support arm, wherein the slide shaft [slides] is arranged and constructed to slide horizontally relative to the support arm and

a vertically pivotable hinge coupling [said saw blade] the saw unit to the slide shaft, wherein:

when the first sensor detects vertical pivotal movement of the saw blade relative to the slide shaft, [and] the first lock [selectably] fixes the slide shaft in a position relative to the support arm [in response to detection of vertical pivotal movement] and

when the second sensor detects horizontal movement of the saw blade relative to the support arm, [and] the second lock [selectably] fixes the saw blade in a position relative

to the slide shaft [in response to detection of horizontal movement].

23. (Thrice Amended) An apparatus as in claim 22 wherein:

the slide shaft is slidably received in a holder connected to the support arm,

the first lock comprises a first screw inserted into a first threaded hole formed in the holder in a direction perpendicular to [an axial direction] a longitudinal axis of the slide shaft, [the first screw having one end abutting] one end of the first screw being arranged and constructed to abut the slide shaft, wherein the first screw is coupled to the first actuator and the first actuator [rotates] is arranged and constructed to rotate the first screw in both clockwise and counterclockwise directions so as to move the first screw toward and away from the slide shaft,

the second lock comprises a second screw inserted into a second threaded hole formed in the saw unit in a direction parallel to the vertical pivotal axis of the apparatus,

and wherein the apparatus further comprises a flange portion having an abutting surface extending within a plane perpendicular to the vertical pivotal axis of the saw blade, [and is disposed such that] one end of the second screw [selectively abuts] being arranged and constructed to abut the

abutting surface of the flange portion, [and] wherein the second screw is coupled to the second actuator and the second actuator [rotates] is arranged and constructed to rotate the second screw in both clockwise and counterclockwise directions so as to move the second screw toward and away from the abutting surface.

24. (Amended) An apparatus as in claim 23 further comprising:

a first dust cover [mounted on the holder so as to cover the first actuator and the first screw, whereby] protecting the first actuator and the first screw [are protected] from the outside environment and

a second dust cover [disposed over the saw blade so as to cover the second actuator and the second screw, whereby] protecting the second actuator and the second screw [are protected] from the outside environment.

25. (Thrice Amended) An apparatus as in claim 24 further comprising:

a first detector plate mounted on either the slide shaft or the support arm, wherein the first sensor includes a first optical sensor mounted on the other of the slide shaft and the support arm, the first detector plate having a plurality of first parallel identification bars that are spaced from each

other by predetermined distances, and the first sensor is disposed in relation to the first detector plate such that the first sensor detects movement of the first parallel identification bars as a change in a reflected light pattern and

a plurality of second parallel identification bars marked on the slide shaft, wherein the second sensor includes a second optical sensor coupled to the holder, the second parallel identification bars are spaced from each other by predetermined distances in [a] the longitudinal [direction] axis of the slide shaft and the second optical sensor is disposed in relation to the second parallel identification bars such that the second sensor detects movement of the second parallel identification bars as a change in a reflected light pattern.

26. (Twice Amended) An apparatus comprising:

a table having a surface for placing a workpiece thereon,

a saw unit having a saw blade,

a first means [for axially displacing the saw relative to the table, wherein the first means enables] for enabling the saw unit to move in a horizontal plane that is parallel to the surface of the table, the first means being [and is] coupled to the table and the saw unit,

a second means [for vertically pivoting the saw relative to the table, wherein the second means enables] for enabling the saw unit to move in a vertical plane relative to the surface of the table, the second means being [and is] coupled to the table and the saw unit,

a first sensor arranged and constructed to detect the saw unit pivotally moving in the vertical plane,

a first lock operably coupled to the first means and the first sensor, wherein the first lock automatically prevents horizontal movement of the saw unit upon detection by [a] the first sensor of the saw unit pivotally moving in the vertical plane,

a second sensor arranged and constructed to detect the saw unit moving in the horizontal plane and

a second lock operably coupled to the second means and the second sensor, wherein the second lock automatically prevents vertical pivotal movement of the saw unit upon detection by [a] the second sensor of the saw unit moving in the horizontal plane.

27. (Twice Amended) An apparatus as in claim 26, wherein the first lock comprises a first screw, wherein the first screw fixes the saw unit in position relative to the table in the horizontal plane when the first screw engages the first means.

28. (Twice Amended) An apparatus as in claim 27 further comprising:

a first actuator coupled to the first sensor and the first screw, wherein the first actuator rotates the first screw in response to detection by the first sensor of pivotal movement of the saw unit in the vertical plane.

29. (Twice Amended) An apparatus as in claim 28, wherein the second lock comprises a second screw, wherein the second screw fixes the saw unit in position relative to the table in the vertical plane when the second screw engages the second means.

Please cancel claims 30-32 without prejudice.

33. (Amended) An apparatus comprising:

a table;

a saw coupled to the table, the saw being movable at least in a horizontal direction relative to the table and a vertical direction relative to the table;

a sensor[, wherein the sensor detects] coupled to the saw or the table and disposed in a position to detect movement of the saw in the vertical direction relative to the table and

a [first] lock operably coupled to the sensor, wherein the [first] lock automatically prevents horizontal movement of the saw upon detection by the [first] sensor of the saw [pivotally] moving in the vertical direction relative to the table.

34. (Amended) An apparatus comprising:

a table;

a saw coupled to the table, the saw being movable at least in a horizontal direction relative to the table and a vertical direction relative to the table;

a sensor[, wherein the sensor detects] coupled to the saw or the table and disposed in a position to detect movement of the saw in the horizontal direction relative to the table and

a [first] lock operably coupled to the sensor, wherein the [first] lock automatically prevents vertical movement of the saw upon detection by the [first] sensor of the saw moving in the horizontal direction relative to the table.